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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/579,082	05/12/2006	Marc Charles Berckmans	19790-009US1	6371

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FISH & RICHARDSON P.C.
PO BOX 1022
MINNEAPOLIS, MN 55440-1022

EXAMINER	
KRAUSE, ANDREW E	
ART UNIT	PAPER NUMBER
1794	

NOTIFICATION DATE	DELIVERY MODE
06/10/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PATDOCTC@fr.com

Office Action Summary	Application No.	Applicant(s)	
	10/579,082	BERCKMANS ET AL.	
	Examiner	Art Unit	
	ANDREW KRAUSE	1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16,20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Listing of Claims

Claims 1-16,20 are pending. Claims 1 and 14 are currently amended.

Claim Rejections - 35 USC § 103

1. **Claims 1-16,20** are rejected under 35 U.S.C. 103(a) as being unpatentable over Idaszak (US #4,021,927, hereafter '927) in view of Vezzani (EP 0710670 A1, hereafter '670).

2. '927 discloses a method for modifying starch or starch derivatives (column 3, lines 47-50) comprising:

a. Introducing a continuous flow of starch substrate, gas, (column 3, lines 57-65) and optionally, one or more reagents (column 5, lines 35-45), into a reactor,

b. Wherein the starch substrate has a moisture content between 10-12% by weight (column 4, lines 10-20)

c. A residence time in the reactor of less than 1 hour and is heated to between 125 and 380° F (column 8, lines 10-20),

d. Characterized in that the starch substrate and the gas are introduced into the reactor in opposing directions (column 3, lines 47-65 disclose that this preferably occurs counter-currently)

3. '927 fails to disclose that the reactor contains a cylindrical body in which one or plurality of blades conveys the starch substrate from an inlet at a first fist end of the reactor to an outlet at a second end of the reactor. However, '670 discloses a method of modify starches in a cylindrical reactor, wherein the reactor contains a bladed rotor which conveys the starch substrate from the inlet of the reactor to the outlet (column 2, lines 1-30). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the reactor of '927 to contain a rotor with blades that convey the starch from the inlet of the reactor to the outlet as disclosed in '670 because the agitation applied by a rotor within the reactor favors the completion of the modification reaction (column 2, lines 39-43).

4. **Regarding claims 2, 20,** '927 and '670 disclose the method according to claim 1. Based on the diameter of the reactor tubes of '927 (column 13, table) and the rpm range of 300-1500 rpm disclosed in '670 (column 2, lines 5-10), the tip speed of a blade in the method according to '927 and '670 will be between 1-5 m/s.

5. **Regarding claim 3,** the starch is disclosed to have 10-12% moisture (column 4, lines 10-20)

6. **Regarding claim 4**, the starch substrate is disclosed to be a native starch or a starch derivative (column 7, lines 45-55).

7. **Regarding claim 5**, '927 and '670 discloses the method of claim 1 but fail to explicitly disclose that the starches are added to the reactor in powdered form. However, '927 discloses that the starches introduced to the reactor are starches such as cornstarch and potato starch (column 7, lines 45-55). These starches are well known in the art to generally come in powdered form. Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to add starch to the reactor in a powdered form, since starches like the ones used in '927 are well known to come in powdered form, and there is no suggestion to use the starch in another form. In other words, if one having ordinary skill in the art at the time of the invention were to practice the invention of '927 absent instruction to change the form of the starch to one other than a powder, they would have used starches like cornstarch or potato starch in powdered form, because the art accepted definition of these starches provides for them being in powdered form.

8. **Regarding claims 6-7,** the reagent disclosed is an acid (column 5, lines 35-45), specifically hydrochloric acid, which is a mineral acid.

9. **Regarding claim 8**, the reagents are added in an amount between 0.001 to 0.10 by weight (column 8, lines 1-7).

10. **Regarding claim 9**, it is disclosed that the hydrochloric acid may be added as a gas (example 1).

11. **Regarding claim 10**, the acid is added to the starch prior to being added to the reactor (column 7, lines 55-60).

12. **Regarding claim 11**, the residence time is disclosed to frequently range from 10-30 minutes (column 8, lines 15-17).

13. **Regarding claim 12**, the temperature of the reactor is disclosed to be within a temperature range of 125-380° F (column 8, lines 12-15).

14. **Regarding claim 13**, the gas introduced to the reactor can be air, steam, or nitrogen (column 8, lines 27-32).

15. **Regarding claim 14**, '927 discloses a method for preparing a highly soluble starch comprising introducing a continuous flow of starch substrate, gas and a mineral acid into a reactor (column 3, lines 57-65, column 5, lines 35-45, example 1), wherein the starch substrate has a moisture content between 10 and 12% by weight (column 4, lines 15-20), a residence time in the reactor of between 10 and 30 minutes and is heated to between 170 and 375° C (column 8, lines 12-17), characterized in that the starch substrate and the gas are introduced into the reactor in opposing directions (column 3, lines 47-65 disclose that this preferably occurs counter-currently)

16. '927 fails to disclose that the reactor contains a cylindrical body in which one or plurality of blades conveys the starch substrate from an inlet at a first fist end of the reactor to an outlet at a second end of the reactor. However, '670 discloses a method of

modify starches in a cylindrical reactor, wherein the reactor contains a bladed rotor which conveys the starch substrate from the inlet of the reactor to the outlet (column 2, lines 1-30). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the reactor of '927 to contain a rotor with blades that convey the starch from the inlet of the reactor to the outlet as disclosed in '670 because the agitation applied by a rotor within the reactor favors the completion of the modification reaction (column 2, lines 39-43).

17. **Regarding claim 15**, '927 discloses the method of claim 14, but fails to explicitly disclose that the reaction occurs under alkaline conditions. However, '927 discloses that adjusting the pH (the alkalinity or acidity) of the reaction conditions can allow practitioners of the invention to choose if a certain agent will bleach or oxidize a starch. Therefore it would have been obvious to one having ordinary skill in the art to adjust the alkilinity of the reaction conditions for the intended application, since it has been held that determining the optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F. 2d 272, 205 USPQ 215 (CCPA 1980).

18. **Regarding claim 16**, the highly soluble starch is 94.5% soluble in 25° C water (example 1, test #4050).

Response to Arguments

Applicant's arguments with respect to claims 1-16,20 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANDREW KRAUSE whose telephone number is (571)270-7094. The examiner can normally be reached on 7:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Keith Hendricks can be reached on (571)272-1401. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ANDREW KRAUSE/
Examiner, Art Unit 1794

/KEITH D. HENDRICKS/
Supervisory Patent Examiner, Art Unit 1794